

ABSTRACT OF THE DISCLOSURE

1           In a ring topology network, a number of nodes interconnect  
2   transmission links to form first and second working rings and first and  
3   second optical protection rings in a ring topology. Multiple working paths  
4   are established on each working ring and multiple protection paths are  
5   established on each protection ring corresponding to the working paths. A  
6   first working path spans across first and second nodes for transmission of a  
7   signal in a first direction of the ring topology, and a second working path of  
8   the second working ring spans across the first and second nodes for  
9   transmission of a signal in a second direction of the ring topology opposite  
10   to the first direction. A first protection path on the first protection ring  
11   spans across the first and second nodes for transmission of a signal in the  
12   second direction of the ring topology, and a second protection path of the  
13   second protection ring spans across the first and second nodes for  
14   transmission of a signal in the first direction of the ring topology. The first  
15   and second nodes normally use the first and second working paths,  
16   respectively. Responsive to a failure of one of the first and second working  
17   paths, the first and second nodes use a corresponding one of the first and  
18   second protection paths, instead of the failed working path.